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PATENT

Docket No. SJO920030101US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Donald M. Connelly Jr. et al.

Serial No.: 10/828,784

Filed: April 21, 2004

For: **STORAGE DEVICE ENCLOSURE**

Examiner: Corey M. Broussard

Group Art
Unit: 2835

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Examiner:

Appellants filed a timely Notice of Appeal on October 20, 2005, in response to the Final Office Action mailed July 20, 2005, and the Advisory Action mailed September 22, 2005.

Appellant appeals the rejection of and objections to pending claims 1, 3-11, and 13-20. This Appeal Brief is being filed under the provisions of 37 C.F.R. § 41.37. The filing fee set forth in 37 C.F.R. § 41.20(b)(2) of \$500.00 is to be charged to Deposit Account No. 09-0466. The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or to credit any overpayment, to Deposit Account No. 09-0466.

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1. REAL PARTY IN INTEREST

The real party in interest is the assignee, International Business Machines Corporation, Armonk, New York.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals, interferences, or judicial proceedings.

3. STATUS OF CLAIMS

The Final Office Action rejected Claims 1, 3-11, and 13-30 and objected to Claim 14. Claims 1, 3-6, 8, 9, 11, 13, 14, 16, 21, 24, 25 and 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,445,587 to Pavol (hereinafter "Pavol"). Claims 7, 10, 15, 17, 19, 20, 22, 23, and 26 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Pavol in view of one or more of U.S. Patent No. 5,858,509 to Polch (hereinafter "Polch"), U.S. Patent No. 6,209,842 to Anderson et al. (hereinafter "Anderson"), and U.S. Patent No. 6,775,142 to Bell et al. (hereinafter "Bell").

According to the Advisory Action mailed September 22, 2005, the claims remain rejected and objected to as set forth in the final rejection. The Advisory Action notes that the proposed amendments are not entered because these are asserted to raise new issues. The Advisory Action asserts that the proposed amendments and arguments presented in the request for reconsideration mailed September 14, 2005 raise new issues and/or are unpersuasive. Appellant appeals the rejection of Claims 1, 3-11, and 13-30 and the objection to Claim 14.

4. STATUS OF AMENDMENTS

Appellant proposed amendments in the request for reconsideration mailed September 14, 2005. These amendments were not entered because it is asserted that they would raise new issues and require a further search.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter deals with enclosures for storage devices. See Spec. paragraph 11. Specifically, the claimed invention comprises damped elements to curtail disk

drive vibration and a keyed bezel to prevent damage to interface connections. See Spec. paragraph 11. The claimed invention is configured to overcome self-induced vibration and vibrations caused by transmission from other disk drives in an enclosure chassis. See Spec. paragraph 13.

Conventional storage device enclosures suffer from the effects of multiple storage devices connected in a rigid manner to common or shared supports such as a mounting wall. See Spec. paragraph 4. The combined vibrations transmitted along the shared supports results in write inhibits, soft errors, and slow responses from the storage devices. See Spec. paragraph 4. These types of errors or problems can result in false determinations that a storage device is faulty when the cause is not a storage device defect but instead is a result of combined vibration propagation between storage devices. See Spec. paragraph 5. The density of data stored on storage devices exacerbates the problem. See Spec. paragraph 6. Conventional solutions include damping springs between storage device carriers and the chassis. See Spec. paragraph 7. However, manufacturing and installing such damping springs can prohibitively increase the costs of providing these conventional solutions. See Spec. paragraph 7.

Embodiments of the present invention include an enclosure, systems, a method, and an apparatus for storage device enclosures.¹ See e.g. Claims 1, 9, 18, 21, and 24.

The following references are illustrative of an embodiment of an enclosure. See Claim 1. The enclosure includes an enclosure chassis. See Claim 1. A mounting surface is vertically oriented within the enclosure chassis to form one wall of a drive bay. See Claim 1. The mounting surface receives a horizontally oriented storage device carrier. See Claim 1. The mounting surface includes a first layer and a second layer which sandwich a viscoelastic layer between them. See Claim 1. The viscoelastic layer damps vibration propagation. See Claim 1.

The enclosure also includes a receiver secured to the mounting surface. See Claim 1 with entered amendments. The receiver retains a first storage device carrier in a perpendicular orientation with respect to the mounting surface. See Claim 1 with entered amendments.

¹ Although Appellant has summarized embodiments of the present invention, the present invention is defined by the claims themselves. Appellant's summary is not intended to limit the scope of the claims or individual claim elements in complying with the appeal brief requirements under 37 C.F.R. § 41.37(c)(v).

Advantageously, the claimed enclosure includes a mounting surface and receiver that cooperate to substantially isolate one storage device from other storage devices in the enclosure to minimize the affects of vibration propagation within the enclosure.

Figure 1, submitted as a replacement sheet, illustrates one embodiment of mounting surface and receiver in accordance with the claimed invention. See replacement Figure 1. The mounting surface 112 includes a first layer 118 and second layer 120 having a viscoelastic layer 116 disposed between them. See replacement Figure 1. The viscoelastic layer provides damping of vibrations between the two layers. See Spec. paragraph 32. The mounting surface 112 includes a receiver 115. See Spec. paragraph 29. The receiver 115 may be secured to, or formed as part of, the mounting surface 112. See Spec. paragraph 29. The receiver 115 positions and orients the storage device carrier relative to the mounting surface 112. See Spec. paragraph 29. In certain embodiments, a storage device carrier is secured to a single mounting surface 112 by way of a receiver 115. See Spec. paragraph 29. The receiver 115 may comprise a pair of rails. See Spec. paragraph 29.

Claims 5, 6, 13, and 14 further clarify the isolation function of the receivers 115. See Claims 5, 6, 13, and 14. In Claims 5 and 13, a first storage device carrier is mounted to one side of the mounting surface 112 and a second storage device carrier is mounted to an opposite side of the mounting surface 112. See Claims 5 and 13. Such a configuration permits vibrations from the first and second storage device carriers to cancel each other out. Claims 6 and 14 recite an embodiment in which the first storage device carrier and second storage device carrier are mounted to the same side of the mounting surface 112. See Claims 6 and 14. Alternatively, a storage device carrier may be secured to a pair of mounting surfaces 112 by way of receivers 115. The various configurations for the mounting surface 112 and receivers 115 permit different degrees of isolation for storage device carriers to minimize vibration propagation.

The system of Claim 9 includes substantially the same subject matter as that described above in relation to Claim 1. See Claims 1 and 9. The system of Claim 18, method of Claim 21, and apparatus of Claim 24 include substantially the same elements as those described above in relation to Claim 1. See Claims 1, 18, 21, and 24. In addition, Claims 18, 21, and 24 recite an interface shelf oriented horizontally and coupled to the enclosure such that the interface shelf isolates storage device bays above and below the interface shelf. See Claims 1, 18, 21, and 24.

Figure 1 illustrates the interface shelf 122. See Figure 1. The interface shelf 122 separates upper drive bays from lower drive bays such that inter-bay vibration propagation is inhibited by the void created by the interface shelf 122. See Spec. paragraph 31. The interface shelf 122 improves stiffness of the enclosure chassis 102. See Spec. paragraph 31.

Claims 10, 17, 19, 20, and 23 recite clip-on damped springs 200 that resiliently couple the storage device carrier 300 to the mounting surface 112. See Spec. paragraph 35. The clip-on damped spring 200 assists in coupling the storage device carrier 300 to the mounting surface 112. See Spec. paragraph 12 and 35. Figures 2a, 2b, and 3 illustrate embodiments of clip-on damped springs. See Spec. paragraph 35. Specifically, the clip-on damped springs comprise top and bottom elements 206, 208 with a viscoelastic element 210 in between. See Claims 17, 20, and 23, Spec. paragraph 35.

Additionally, an embodiment of the present invention includes an apparatus claimed in means plus function format under 35 U.S.C. § 112, sixth paragraph. Examples of the structure, material, or acts corresponding to the means recited in Claims 24, 25, and 27-30 are referenced below.

With regard to Claims 24 and 25, the mounting surface 112, with the viscoelastic element 116 between a first element 118 and a second element 120, is one example of the damping means. See Fig. 1; Spec. paragraph 32. With regard to Claim 27, the receiver 115 is one example of the receiving means. See amended Fig. 1; amended Spec. paragraph 29, paragraph 12. With regard to Claims 28-30, the key 604 is one example of the keying means. See Figs. 6 and 7; Spec. paragraphs 42, 44, and 45.

Consequently, the claimed invention includes a receiver and mounting surface cooperate to facilitate isolation of one storage device from other storage devices in the enclosure to minimize the effects of vibration propagation within the enclosure. In addition, the claimed invention includes a layer of the mounting surface that is viscoelastic to further enhance vibration damping. The claimed invention also includes an interface shelf that further isolates upper drive bays from lower drive bays to reduce vibration propagation. Finally, the clip-on damped springs assist in securing storage device carriers within drive bays and in damping vibrations because of a viscoelastic inner layer.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Whether the Examiner failed to establish a *prima facie* case of anticipation under 35 U.S.C. § 102(b) for Claims 1, 3-6, 8, 9, 11, 13, 14, 16, 21, 24, 25 and 27 where the limitations of the claims are not taught or suggested within the cited reference.

II. Whether the Examiner failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a) for Claims 7, 10, 15, 17, 19, 20, 22, 23, 26, and 28-30 where the limitations of the claims are not taught or suggested within the combination of cited references and no motivation to make the combination exists.

III. Whether the Examiner failed to examine Claim 14 as a separate and distinct claim from Claim 13 where the claims are clearly different.

7. ARGUMENT

I. The Examiner failed to establish a *prima facie* case of anticipation under 35 U.S.C. § 102(b) because the cited reference does not teach every element of Claims 1, 3-6, 8, 9, 11, 13, 14, 16, 21, 24, 25 and 27.

INDEPENDENT CLAIMS 1, 9, 18, 21, and 24

A. Independent Claims 1, 9, 18, 21, and 24

Appellant respectfully submits that independent Claim 1 is representative of the patentable subject matter of Claims 9, 18, 21, and 24. Appellant respectfully submits that independent Claim 1 is patentable over Pavol. Claim 1 states:

An enclosure for storing at least one storage device, comprising:
an enclosure chassis;
a mounting surface **oriented vertically** and coupled to the enclosure chassis to form one wall of a drive bay, the **mounting surface configured** to receive a **horizontally oriented storage device carrier**, and the mounting surface having a first layer and a second layer;
a viscoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface; and
a **receiver** secured to the mounting surface and configured to **retain** a first storage device carrier substantially **perpendicular** to the mounting surface. (emphasis added).

B. The Rejection under 35 U.S.C. § 102(b)

The Advisory Action mailed September 22, 2005 maintains the final rejection under 35 U.S.C. § 102(b) as set forth in the Final Office Action mailed July 20, 2005. The Advisory Action states further reasoning in support of the final rejection, as will be discussed below. The Final Office Action states:

With respect to claim 1, Pavol teaches an enclosure chassis (104); a mounting surface (interior surface of mounting bay 108 outer surface of 128) **oriented vertically** (the side walls of the bay are oriented vertically, see Fig. 3) and coupled to the enclosure chassis to form one wall of a drive bay (108), the mounting surface configured to receive a **horizontally oriented** storage device carrier (106, the top and bottom of the carrier are oriented with the horizon, see Fig. 3), the mounting surface having a first layer (128) and a second layer (130, 132); a

viscoelastic layer (126) disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface; and **a receiver** (the layer 128 is to receive the carrier 106, col 2, 24-27) secured to the mounting surface.

Final Office Action, 7/20/2005, pgs. 2-3 (emphasis added).

C. Withdrawal of the Rejection under 35 U.S.C. § 102(b)

Applicant respectfully disagrees with the Office Action's characterization of the cited reference. As described immediately below, Pavol fails to teach or suggest the limitations "a receiver secured to the mounting surface...to retain a first storage device carrier substantially perpendicular to the mounting surface." and "a mounting surface oriented vertically...to receive a horizontally oriented storage device carrier" as recited in Claim 1.

Pavol, in general, is directed toward a resilient layer and cover disposed between a drive tray housing and a drive module. Pavol, Abstract. The drive module 106 and drive tray housing 110 are illustrated in Figure 1. Figure 2 and the accompanying description in col. 3, line 21 – col. 3, line 35 describe the resilient layer 126 in relation to the drive module 106. The cover 128 is best illustrated in Figures 3 and 4. Various positions for the resilient layer 126 are then also described in relation to Figures 3-6.

The Advisory Action suggests that the outer surface of the cover 128 constitutes the receiver recited in Claim 1. See Advisory Action page 2. Appellant disagrees. The Examiner is impermissibly ignoring the remaining limitations that define the receiver. The surface of the cover 128 or the cover 128 are not capable of performing the same function and operation of the receiver in Claim 1, namely retaining "a first storage device carrier substantially perpendicular to the mounting surface."

The MPEP establishes the standard for claim interpretation during prosecution. Claims are to be given their broadest reasonable interpretation. MPEP §2111. In addition, "the words of the claim must be given their plain meaning unless applicant has provided a clear meaning in the specification." MPEP §2111.01. However, "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). MPEP §2143.03.

Appellant submits that the Examiner has failed to give proper weight to the terms: “configured to retain a first storage device carrier substantially perpendicular to the mounting surface.” The Examiner suggests that the surface of the cover 128 connected to the vertical bay side walls 136 anticipate the receiver in Claim 1. See Advisory Action page 2 and Final Office Action page 12, para. 14. Appellant disagrees.

While the surface of the cover 128 along the vertical bay side walls 136 of Pavol is “something,” The surface of cover 128 is not capable of retaining a storage device perpendicular with respect to the mounting surface. In fact, the surface of the cover 128 is configured to facilitate sliding of the drive module 106 in to, and out of, the drive bay 108. See Pavol Col. 3 line 13, Col. 6 lines 14-15. Therefore, Pavol teaches against a cover 128 capable of retaining the drive module 106.

Appellants submit that the function of retaining the drive module 106 perpendicular to the side walls 136 is provided principally by the bottom shelf 132 (or potentially the top shelf 130), not the surface of the cover 128. See Pavol Col. 4, lines 60-65. Pavol explains the importance of the vertical support provided by the bottom shelf 132. See Pavol Col. 4, lines 60-62. Consequently, the surface of the cover 128 provides substantially no vertical support. Furthermore, the top shelf 130 and bottom shelf 132 fail to anticipate the limitation that the mounting surface is vertically oriented. See Claim 1. Pavol contains no teachings that the cover 128 comprises an adhesive or has a texture or other feature that can serve a retaining function.

Pavol does teach that the dimensions of the bay may be such that the resilient layer 126 compresses when a drive module 106 is inserted. See Pavol Col. 4 line 31-35. However, Pavol fails to teach or disclose that this compression is sufficient that the cover 128 is capable of retaining the drive module 106 should the bottom shelf 132 be absent. In addition, Claim 1 recites that the mounting surface forms **one** wall of a drive bay. Consequently, Appellants submit that the amount of compression force required to retain a drive module 106 with only a single resilient layer 126 would require such a thick resilient layer 126 that Pavol would be rendered impractical.

Appellants submit that the Examiner’s attention is focused on the name of the element, the receiver, instead of on the other functional limitations that define the receiver. Pavol fails to teach a receiver capable of retaining “a first storage device carrier substantially perpendicular to

the mounting surface.” The Examiner’s interpretation ignores all the terms in the claim and takes the life out of the term “to retain” which has been intentionally used in drafting Claim 1.

In addition, Appellants submit that Pavol fails to teach or disclose “a mounting surface oriented vertically...to receive a horizontally oriented storage device carrier” as recited in Claim 1. In the Advisory Action, the Examiner suggests that the storage device carrier is “at least horizontally oriented.” See Advisory Action page 3. Appellants are not suggesting that the prior art not contain any portion that is horizontally oriented as supposed by the Examiner in the Advisory Action on page 2. To do so is illogical, because any tangible object can be broken down until a portion is identified that is oriented in some respect with the horizon.

Instead, Appellant is requesting that the storage device carrier be interpreted as a single unit rather than being broken down into constituent parts until a part is located that coincidentally is also oriented with the horizon. Those of skill in the art recognize storage devices and storage device carriers. Storage devices are typically disk drives comprising a set of stacked round platters enclosed within a three-dimensional chassis that is rectangular. The disk drive chassis need not be rectangular, however those of skill in the art recognize that most disk drives are rectangular in order to conserve space and materials. Those of skill in the art also recognize that the horizontal orientation or vertical orientation of a disk drive and/or disk drive carrier is to be measured from the perspective of the front of the disk drive.

When viewed from the front of the disk drive, the longest edges extend from side to side and the shortest edges extend from top to bottom. Consequently, one of ordinary skill in the art recognizes an axis from one short edge to the other short edge as the axis of orientation. This same axis of orientation is used in reference to the storage device carrier. Consequently, the language in Claim 1 stating that the storage device carrier is horizontally oriented with respect to the mounting surface is clear and clearly distinguished from the vertical orientation of the storage device carrier as taught by Pavol. Appellants submit that the benefits of such an orientation have been explained in previous responses.

In addition, Claim 1 requires that the receiver retain the storage device carrier perpendicular with respect to the vertically oriented mounting surface. See Claim 1. This requirement reinforces the requirement that the longest edges of the storage device carrier when viewed from the front must align with the horizon because the mounting surface is vertical. The

limitation that the mounting surface is vertical is undisputed by the Examiner. Therefore, the language of the claims clearly require that the “mounting surface [is] oriented vertically...to receive a horizontally oriented storage device carrier.”

Given that Pavol fails to teach or suggest all of the elements recited in Claims 1 and 9 of the present application, Appellants respectfully submit that independent Claims 1 and 9 are patentable over Pavol. Appellants request that the rejection of Claims 1 and 9 under 35 U.S.C. § 102(b) be withdrawn.

Given that dependent Claims 3-8, 10, 11, 13-17, 19, 20, 22, 23, and 25-27 depend from Claims 1, 9, 18, 21, and 24, Appellants respectfully submit that Claims 3-6, 8, 11, 13, 14, 16, 25, and 27 are also patentable over Pavol. Appellants request that the rejection of dependent Claims 3-6, 8, 11, 13, 14, 16, 25, and 27 under 35 U.S.C. § 102(b) be withdrawn. Applicant also requests that the rejection of dependent Claims 7, 10, 15, 17, 19, 20, 22, 23, and 26 under 35 U.S.C. § 103(a) be withdrawn for substantially the same reasons as those described above in relation to Claim 1. Applicant also requests that the objections to dependent Claims 13 and 14 be withdrawn.

INDEPENDENT CLAIMS 18, 21, and 24

A. Independent Claims 18, 21, and 24

Appellant respectfully submits that independent Claim 1 is representative of the patentable subject matter of Claims 18, 21, and 24. Therefore, Appellant respectfully submits that Claims 18, 21, and 24 are patentable for at least the same reasons as independent Claim 1. In addition, Claim 24 is representative of an additional patentable element shared by Claims 18, 21, and 24. Claim 24 states:

An apparatus for reducing vibration originating from at least one storage device, comprising:
an enclosure chassis configured to store at least one storage device;
a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface configured to receive less than three horizontally oriented storage device carriers and having a damping means for damping the vibrational energy generated by the storage device and received by the mounting surface; and

an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf **isolates** horizontal storage device **bays above** the interface shelf **from** storage device **bays below** the interface shelf.
(Emphasis added).

B. The Rejection under 35 U.S.C. § 102(b)

The Advisory Action mailed September 22, 2005 maintains the final rejection under 35 U.S.C. § 102(b) as set forth in the Final Office Action mailed July 20, 2005. The Advisory Action states no further reasoning in support of the final rejection. The Final Office Action states:

With respect to claim 24, Pavol teaches an enclosure chassis (104) configured to store at least one storage device (102), a mounting surface (interior surface of mounting bay 108) oriented vertically (the side walls of the bay are oriented vertically, see Fig. 3) and coupled to the enclosure chassis to form one wall of a drive bay (108), the mounting surface configured to receive less than three horizontally oriented a storage device carriers (106, the mounting surface is configured to receive one carrier, which is less than three) and having a damping means (foam laminates comprising elements 126, 128, and shelves 130, 132) for damping the vibrational energy generated by the storage device and received by the mounting surface.

Final Office Action, 7/20/2005, pg. 5.

C. Withdrawal of the Rejection under 35 U.S.C. § 102(b)

Applicant respectfully disagrees with the Office Action's characterization of the cited reference. As described immediately below, Pavol fails to teach or suggest the limitation "**an interface shelf** oriented horizontally and coupled to the enclosure chassis such that the interface shelf **isolates** horizontal storage device **bays above** the interface shelf **from** storage device **bays below** the interface shelf" as recited in Claims 18, 21, and 24.

Pavol is described above. Pavol describes storage device interfaces comprising the connector 138 of the media drive that connects to the socket 140 of a motherboard 142. See Pavol Col. 5, lines 10-11, Figures 2 and 3. Pavol says nothing about an interface shelf.

The Final Office Action mentions only the top shelf 130 and/or bottom shelf 132 as a module or structure of Pavol that anticipates the interface shelf. Appellant disagrees with this suggestion by the Office Action. Again, the Examiner is impermissibly ignoring the remainder of the claim element that defines the interface shelf. Specifically, Pavol fails to teach an interface

shelf that isolates bays above the shelf from storage device bays below the interface shelf within the same enclosure chassis.

The specification describes the interface shelf as a structure positioned between the horizontally aligned drive bays 114. See Spec. paragraph 29. “The positioning of the interface device shelf 122 improves stiffness of the enclosure chassis 102 and provides a void between adjacent drive bays 114 to reduce vibration propagation to the adjacent drive bays 114. In the illustrated embodiment, the interface device shelf 122 separates the upper drive bays 114 from the lower drive bays 114, thus reducing vibration propagation between the upper drive bays 114 and the lower drive bays 114.” See Spec. paragraph 31. Appellants submit that the interface shelf serves a role in reducing inter-drive bay vibration propagation.

Appellants find no teaching or suggestion in Pavol that the top shelf 130 and/or bottom shelf 132 isolate upper drive bays 114 from lower drive bays 114. Instead, Pavol seems to teach that the top shelf 130 and/or bottom shelf 132 serve as external walls for the chassis not as a structure for isolating drive bays within the chassis from each other.

Appellants note once again that “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). *MPEP* §2143.03.

Appellant submits that the Examiner has failed to give proper weight to the terms: “isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf.” Appellant submit that no such teaching or disclosure of this feature of an interface shelf is taught by Pavol.

Given that Pavol fails to teach or suggest all of the elements recited in Claims 18, 21, and 24 of the present application, Appellants respectfully submit that independent Claims 18, 21, and 24 are patentable over Pavol. Appellants request that the rejection of Claims 18, 21, and 24 under 35 U.S.C. § 102(b) be withdrawn.

II. The Examiner failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a) because the cited references, either alone or in combination, do not teach or suggest all of the limitations of Claims 7, 10, 15, 17, 19, 20, 22, 23, 26, and 28-30 and no motivation to make the combination exists.

DEPENDENT CLAIMS 7, 10, 15, 17, 19, 20, 22, 23, 26, and 28-30

A. Claims 7, 15, 22, and 26

Given that Claims 7, 15, 22, and 26 depend from independent Claims 1, 9, 21, and 24, which are believed to be patentable as described above, Applicant respectfully submits that the rejection of Claims 7, 15, 22, and 26 under 35 U.S.C. § 103(a) is moot because Pavol and Polch fail to teach all the elements of the independent claims as explained above. Accordingly, Applicant requests that the rejection of dependent Claims 7, 15, 22, and 26 under 35 U.S.C. § 103(a) be duly withdrawn.

B. Claims 10, 17, and 23

Given that Claims 10, 17, and 23 depend from independent Claims 1, 9, and 21, which are believed to be patentable as described above, Applicant respectfully submits that the rejection of Claims 10, 17, and 23 under 35 U.S.C. § 103(a) is moot because Pavol and Anderson fail to teach all the elements of the independent claims as explained above. Accordingly, Applicant requests that the rejection of dependent Claims 10, 17, and 23 under 35 U.S.C. § 103(a) be duly withdrawn.

C. Claims 18 and 28-30

Given that Claims 28-30 depend from independent Claims 1, 9, 18, 21, or 24, which are believed to be patentable as described above, Applicant respectfully submits that the rejection of Claims 18 and 28-30 under 35 U.S.C. § 103(a) is moot because Pavol and Bell fail to teach all the elements of the independent claims as explained above. Accordingly, Applicant requests that the rejection of dependent Claims 18, 28-30 under 35 U.S.C. § 103(a) be duly withdrawn.

D. Claims 19 and 20

Given that Claims 19 and 20 depend from independent Claim 18, which is believed to be patentable as described above, Applicant respectfully submits that the rejection of Claim 19 under 35 U.S.C. § 103(a) is moot because Pavol, Bell, and Anderson fail to teach all the elements of the independent claims as explained above. The Final Office Action suggests that Anderson teaches a clip-on spring as recited in Claims 19 and 20. See Final Office Action page 11, para. 12 – page 12. The Final Office Action suggests that one of skill in the art would combine Pavol, Bell, and Anderson to produce an apparatus that includes the clip-on springs. Appellants disagree. Anderson teaches away from clip-on springs. Anderson teaches that the springs are mounted using bolts. See Anderson Fig. 4, Col. 3, lines 64-65. Appellants disagree that Anderson's reference to other mounting means (Anderson Col. 4, lines 66-67) constitutes a teaching sufficient for one of skill in the art to produce clip-on springs as recited in Claims 19 and 20. Accordingly, Applicant requests that the rejection of dependent Claims 19 and 20 under 35 U.S.C. § 103(a) be duly withdrawn.

Combination of Pavol and Polch fail to teach or suggest all claim elements

Neither Pavol nor Polch teach or suggest combining concepts found in each or the desirability of such a combination. As “[t]he teaching or suggestion to make the claimed combination ... must be found in the prior art, not in applicant's disclosure,” MPEP 2143, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), Appellants submit that Pavol and Polch fail in combination or alone to provide the requisite motivation to combine teachings of each to make a *prima facie* case of obviousness. Pavol fails to teach a receiver, consequently Appellant finds no motivation to combine Pavol with any of the references because this recited element would be lacking.

Combination of Pavol and Bell fail to teach or suggest all claim elements

Neither Pavol nor Bell teach or suggest combining concepts found in each or the desirability of such a combination. As “[t]he teaching or suggestion to make the claimed combination ... must be found in the prior art, not in applicant's disclosure,” MPEP 2143, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), Appellants submit that Pavol and

Bell fail in combination or alone to provide the requisite motivation to combine teachings of each to make a *prima facie* case of obviousness. Pavol fails to teach a receiver, consequently Appellant finds no motivation to combine Pavol with any of the references because this recited element would be lacking.

Combination of Pavol and Anderson fail to teach or suggest all claim elements

Neither Pavol nor Anderson teach or suggest combining concepts found in each or the desirability of such a combination. As “[t]he teaching or suggestion to make the claimed combination ... must be found in the prior art, not in applicant's disclosure,” MPEP 2143, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), Appellants submit that Pavol and Anderson fail in combination or alone to provide the requisite motivation to combine teachings of each to make a *prima facie* case of obviousness. Pavol fails to teach a receiver, consequently Appellant finds no motivation to combine Pavol with any of the references because this recited element would be lacking.

Given that Pavol, Polch, Bell, and Anderson fail to teach or suggest a motivation to combine the teachings to provide all of the elements recited in the independent Claims 1, 9, 18, 21, and 24 of the present application, Applicant respectfully submits that Claims 1, 3-11, and 13-30 are patentable over Pavol, Polch, Bell, and Anderson. Applicant requests that the rejection of Claims 7, 10, 15, 17, 19, 20, 22, 23, 26, and 28-30 under 35 U.S.C. § 103(a) be withdrawn.

III. The Examiner failed to examine Claim 14 as a separate and distinct claim from Claim 13 where the claims are clearly different.

The Final Office Action objected to Claim 14 suggesting that Claim 14 is a duplicate of Claim 13. Appellants disagree.

Claim 13 recites: “...wherein the first storage device carrier is mounted on one side of the mounting surface, and the second storage device carrier is mounted to an **opposite side** of the mounting surface.” (Emphasis added). Claim 13 refers to first and second storage device carriers that extend from **opposite** sides of the same mounting surface. In contrast, Claim 14

recites "...wherein the first storage device carrier is mounted on one side of the mounting surface, and the second storage device carrier is mounted on the **same side** of the mounting surface." (Emphasis added). Hence, Claim 14 refers to first and second storage device carriers that extend from one side, the **same side** of the mounting surface. Appellants submit that while Claims 13 and 14 are very similar, they recite fundamentally different concepts. Therefore, Appellants request that the objection to Claim 14 be withdrawn.

Appellants note that this objection may reflect a simple oversight on the part of the Examiner. However, this objection may be indicative of a larger problem, mentioned above, namely a lack of care and attention to detail in the examination of the present application. Appellants submit that the lack of careful examination is what is preventing issuance rather than lack of novelty in the present invention.

SUMMARY

In view of the foregoing, each of the claims on appeal has been improperly rejected because the Examiner has not properly established a *prima facie* case of anticipation or obviousness for Claims 1, 3-11, and 13-30. Appellant submits that the foregoing arguments establish the novelty and non-obviousness of the claims of the present application. Therefore, Appellants respectfully request reversal of the Examiner's objection and rejection under 35 U.S.C. §§ 102(b) and 103(a) and allowance of pending Claims 1, 3-11, and 13-30. Accordingly, Appellant submits that Claims 1, 3-11, and 13-30 are patentable.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David J. McKenzie", is written over a horizontal line.

David J. McKenzie
Reg. No. 46,919
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Date: December 15, 2005
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8. CLAIMS APPENDIX

The claims involved in the appeal, namely Claims 1, 3-11, and 13-30, are listed below.

1. An enclosure for storing at least one storage device, comprising:
 - an enclosure chassis;
 - a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface configured to receive a horizontally oriented storage device carrier, the mounting surface having a first layer and a second layer;
 - a viscoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface; and
 - a receiver secured to the mounting surface and configured to retain a first storage device carrier substantially perpendicular to the mounting surface.
2. (Canceled).
3. The apparatus according to claim 1, further comprising an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf.
4. The apparatus according to claim 1, further comprising a second receiver secured to the mounting surface, the second receiver configured to retain a second storage device carrier.

5. The apparatus according to claim 4, wherein the mounting surface is configured to receive the first storage device carrier on one side of the mounting surface and the second storage device carrier on an opposite side of the mounting surface.

6. The apparatus according to claim 4, wherein the mounting surface is disposed to receive the first storage device carrier on one side of the mounting surface and the second storage device carrier on a same side of the mounting surface as the first storage device.

7. The apparatus according to claim 1, further comprising a viscoelastic layer disposed between a first layer and a second layer of the enclosure chassis.

8. The apparatus of claim 1, wherein the storage device is a disk drive.

9. A system for storing at least one storage device, comprising:

an enclosure chassis;

a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface having a first layer and a second layer and a viscoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface;

a first and second storage device carrier configured to retain a storage device therein; and

a first and second receiver secured to the mounting surface, the receivers configured to receive and retain the storage device carriers substantially perpendicular to the mounting surface.

10. The system according to claim 9, wherein the storage device carrier further comprises a clip-on spring configured to resiliently couple the storage device carrier between the mounting surface and the receiver, the clip-on spring having first and second ends configured to engage one of the storage device carrier and the mounting surface.

11. The system according to claim 9, further comprising an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf.

12. (Canceled).

13. The system according to claim 9, wherein the first storage device carrier is mounted on one side of the mounting surface, and the second storage device carrier is mounted to an opposite side of the mounting surface.

14. The system according to claim 9, wherein the first storage device carrier is mounted on one side of the mounting surface, and the second storage device carrier is mounted on the same side of the mounting surface.

15. The system according to claim 9, further comprising a viscoelastic layer disposed between a first layer and a second layer of the enclosure chassis.

16. The system of claim 9, wherein the storage device is a disk drive.

17. The system of claim 10, wherein the clip-on spring comprises at least three layers including at least one viscoelastic layer.

18. A system for storing at least one storage device, comprising:

an enclosure chassis;

a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface having a first layer and a second layer and a viscoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface, the mounting surface configured to receive and retain less than three storage device carriers substantially perpendicular to the mounting surface;

an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf;

a storage device carrier including a bezel, the storage device carrier configured to retain a storage device therein, the storage device having a storage device interface; and

a key removably secured to at least one of two positions on the bezel, such that placement of the key into one of the two positions prevents the storage device interface from contacting an incompatible interface upon inserting the storage device carrier into the enclosure chassis.

19. The system of claim 18, further comprising at least one clip-on spring coupled to the storage device carrier, the clip-on spring configured to flexibly couple the storage device carrier to the mounting surface, the clip-on spring having first and second ends configured to engage one of the storage device carrier and the mounting surface.

20. The system of claim 19, wherein the clip-on spring comprises at least three layers including at least one viscoelastic layer.

21. A method for reducing vibration originating from at least one storage device, comprising the steps of:

providing an enclosure chassis configured to store at least one storage device;

providing a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface configured for receiving a horizontally oriented storage device carrier;

providing a first layer on the mounting surface;

providing a second layer on the mounting surface; and

providing a viscoelastic layer disposed between the first and second layer of the mounting surface for reducing vibration propagation throughout the mounting surface; and

providing an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf.

22. The method according to claim 21, further comprising the steps of:

- providing a first layer on the enclosure chassis;
- providing a second layer on the enclosure chassis; and
- providing a viscoelastic layer disposed between the first and second layer of the enclosure chassis, for reducing vibration propagation throughout the enclosure chassis.

23. The method according to claim 21, further comprising the steps of:

- providing a storage device carrier for retaining a storage device;
- securing a receiver to the mounting surface for receiving the storage device carrier; and
- coupling at least one clip-on damped spring to the storage device carrier, for resiliently coupling the storage device carrier between a receiver formed in the mounting surface and the mounting surface.

24. An apparatus for reducing vibration originating from at least one storage device, comprising:

- an enclosure chassis configured to store at least one storage device;
- a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface configured to receive less than three horizontally oriented storage device carriers and having a

damping means for damping the vibrational energy generated by the storage device and received by the mounting surface; and

an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface shelf.

25. The apparatus according to claim 24, wherein the damping means comprises a first layer, a second layer, and a viscoelastic layer between the first layer and the second layer.

26. The apparatus according to claim 25, wherein the viscoelastic layer is a damping adhesive.

27. The apparatus according to claim 24, further comprising a receiving means coupled to the mounting surface for receiving and retaining a storage device carrier perpendicular to the mounting surface.

28. The apparatus according to claim 24, wherein the storage device carrier comprises:

a bezel secured to the storage device carrier and configured to lock the drive carrier within the enclosure; and

a keying means, attached to the bezel, for preventing a storage device carrier, with one type of interface, from contacting an incompatible interface upon inserting the storage device carrier into the enclosure chassis.

29. The apparatus according to claim 28, wherein the keying means for keying a storage device carrier comprises a key removably secured to at least one of two positions on the bezel, and wherein the placement of the key into one of the two positions prevents the storage device carrier interface from contacting an incompatible interface upon inserting the storage device carrier into the enclosure chassis.

30. The apparatus according to claim 28, wherein the keying means for keying a storage device carrier comprises a groove in the enclosure chassis configured to receive the key.

9. EVIDENCE APPENDIX

There is no material to be included in the Evidence Appendix.

10. RELATED PROCEEDINGS APPENDIX

There is no material to be included in the Related Proceedings Appendix.